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HICKMAN PALERMO TRUONG & BECKER/ORACLE

2055 GATEWAY PLACE

SUITE 550

SAN JOSE, CA 95110-1083

EXAMINER

MORRISON, JAY A

ART UNIT

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2168

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/830,211 | Applicant(s) GE ET AL. | |
| | Examiner JAY A. MORRISON | Art Unit 2168 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-14,16,21-23,25-35,37,39-42,46,48,49 and 51-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-8,11-14,16,21-23,25-29,32-35,37,39-41,48,49,51-57 and 60 is/are allowed.
- 6) ☒ Claim(s) 9,10,30,31,42,46,58,59 and 61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/28/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. Claims 1, 2, 4-14, 16, 21-23, 25-35, 37, 39-42, 46, 48-49 and 51-61 are pending.

Allowable Subject Matter

2. Claims 1, 2, 4-8, 11-14, 16, 21-23, 25-29, 32-35, 37, 39-41, 48-49, 51-57 and 60 are allowed.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

The reasons for allowance of claims 1, 22 and 48 are that the prior art of record, including the reference(s) cited above, neither anticipates, nor renders obvious the recited combination as a whole; including the limitations of a method, computer-readable storage medium and system: "...wherein the two or more methods of accessing said one or more XML resources from said database repository include accessing said one or more XML resources through an index and accessing said one or more XML resources without using the index".

The reasons for allowance of claims 40 and 41 are that the prior art of record, including the reference(s) cited above, neither anticipates, nor renders obvious the recited combination as a whole; including the limitations of a method, computer-readable storage medium: "...wherein the step of gathering statistics comprises gathering each of a total number of nodes, in said hierarchy, that are accessible via a path through a specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node, a total number of nodes, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under a level of said specified node, and. a total number of containers, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under said level of said specified node".

Dependent claims 2, 4-8, 11-14, 16, 21, 23, 25-29, 32-35, 37, 39, 48-49, 51-57 and 60 are allowable at least for the reasons recited above including all the limitations of the allowable independent base claim upon which they depend.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 9-10, 30-31, 42, 46, 58-59 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abounaga et al. ('Abounaga' hereinafter) (Estimating the Selectivity of XML Path Expressions for Internet Scale Applications, by Abounaga et al, Proceedings of the 27th VLDB Conference, Roma, Italy, 2001) in view of Sedlar (Patent Number 6,427,123) and further in view of Diao et al. ('Diao' hereinafter) (Diao et al.,

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Path sharing and predicate evaluation for high-performance XML filtering. ACM, Dec. 2003).

As per claim 9, Abounaga teaches

A method comprising the computer-implemented steps of: (see abstract)
gathering statistics by a database server about nodes that are stored in a database repository that is managed by the database server; (section 1, fifth paragraph)
each of which contains a plurality of XML elements; (section 1, ninth paragraph)
storing said statistics; (section 1, sixth paragraph)
and in response to a request to the database server for access to one or more XML resources from said database repository (section 1, sixth paragraph)
wherein the method is performed by one or more computing devices; (abstract)
and wherein XML files of said nodes are XML resources, and wherein each of said XML resources is stored, in association with a location of a node in said hierarchy, in a column of a table in said database repository (section 1, second to last paragraph; section 4; figure 6), and wherein an operator contained in at least one of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository through a particular specified path through a portion of said hierarchy (section 1, second to last paragraph; section 4; figure 6).

Abounaga does not explicitly indicate “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files”.

However, Sedlar discloses “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files” (hierarchical system with index entries for files in a file system, column 5, lines 20-27; note that files on same level in hierarchy can be considered in same node).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga and Sedlar because using the steps of “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files” would have given those skilled in the art the tools to improve the invention by providing a way to label information from diverse data sources. This gives the user the advantage of being able to search content across a multitude of domains in a single search.

Neither Abounaga nor Sedlar explicitly indicate “the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” and “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository”.

However, Diao discloses “the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” (section 6.4.1,

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second paragraph) and “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository” (section 6.4.1, fourth paragraph; section 4.4, second paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga, Sedlar and Diao because using the steps of “the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” and “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository” would have given those skilled in the art the tools to improve the invention by providing fast, one-the-fly matching of XML-encoded data to large numbers of query specifications. This gives the user the advantage of more responsive search systems.

As per claim 10, Abounaga teaches

A method comprising the computer-implemented steps of: (see abstract)
gathering statistics by a database server about nodes that are stored in a
database repository that is managed by the database server; (section 1, fifth paragraph)
each of which contains a plurality of XML elements; (section 1, ninth paragraph)
storing said statistics; (section 1, sixth paragraph)

and in response to a request to the database server for access to one or more XML resources from said database repository, (section 1, sixth paragraph);

and wherein XML files of said nodes are XML resources, and wherein each of said XML resources is stored, in association with a location of a node in said hierarchy, in a column of a table in said database repository (section 1, second to last paragraph; section 4; figure 6), and wherein an operator contained in at least one of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository at a terminal location of a particular specified path through a portion of said hierarchy. (section 1, second to last paragraph; section 4; figure 6)

Abounaga does not explicitly indicate “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files”.

However, Sedlar discloses “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files” (hierarchical system with index entries for files in a file system, column 5, lines 20-27; note that a directory can be considered a file container).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga and Sedlar because using the steps of “wherein said nodes form a hierarchy; wherein each node is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container

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that contains a plurality of XML files” would have given those skilled in the art the tools to improve the invention by providing a way to label information from diverse data sources. This gives the user the advantage of being able to search content across a multitude of domains in a single search.

Neither Abounaga nor Sedlar explicitly indicate “the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics; wherein the method is performed by one or more computing devices” or “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository”.

However, Diao discloses “the database server computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics; wherein the method is performed by one or more computing devices” (section 6.4.1, second paragraph) or “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository” (section 6.4.1, fourth paragraph; section 4.4, second paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga, Sedlar and Diao because using the steps of “the database server computing a computational cost associated with each of two or

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more methods of accessing said one or more XML resources from said database repository, based on said statistics; wherein the method is performed by one or more computing devices” or “wherein the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository” would have given those skilled in the art the tools to improve the invention by providing fast, one-the-fly matching of XML-encoded data to large numbers of query specifications. This gives the user the advantage of more responsive search systems.

As per claims 30-31,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 9-10 and are similarly rejected.

As per claim 42, Aboulnaga teaches

A method comprising the computer-implemented steps of: (see abstract)
in response to a request for access to one or more XML resources from a database repository within a database management system, accessing, from said database management system, statistics about a structure of a hierarchy associated with said one or more XML resources; (section 1, fifth and sixth paragraphs)

each of which contains a plurality of XML elements; (section 1, ninth paragraph)

wherein the method is performed by one or more computing devices; (abstract)

Abounaga does not explicitly indicate “wherein nodes form said hierarchy; wherein each node in said hierarchy is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files”.

However, Sedlar discloses “wherein nodes form said hierarchy; wherein each node in said hierarchy is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files” (hierarchical system with index entries for files in a file system, column 5, lines 20-27; note that a directory can be considered a file container).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga and Sedlar because using the steps of “wherein nodes form said hierarchy; wherein each node in said hierarchy is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files” would have given those skilled in the art the tools to improve the invention by providing a way to label information from diverse data sources. This gives the user the advantage of being able to search content across a multitude of domains in a single search.

Neither Abounaga nor Sedlar explicitly indicate “computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” and “wherein XML files of said nodes are XML resources, and wherein the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more

predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository”.

However, Diao discloses “computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” (section 6.4.1, second paragraph) and “wherein XML files of said nodes are XML resources, and wherein the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository” (section 5.3, last three paragraphs; section 6.2.2, second to last paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Aboulnaga, Sedlar and Diao because using the steps of “computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics” and “wherein XML files of said nodes are XML resources, and wherein the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a

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particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository” would have given those skilled in the art the tools to improve the invention by providing fast, one-the-fly matching of XML-encoded data to large numbers of query specifications. This gives the user the advantage of more responsive search systems.

As per claim 46,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 42 and is similarly rejected.

As per claim 58, Abounaga teaches

A database system comprising: (see abstract)

one or more hardware processors; (system, section 1, second paragraph)

and a database server, executing on the one or more hardware processors, that manages the XML data repository, wherein the database server is configured to: gather statistics about the XML files and the XML file containers, store said statistics, (section 1, fifth paragraph)

receive a request for access to one or more XML resources from the XML database repository, (section 1, sixth paragraph)

Abounaga does not explicitly indicate “an XML data repository comprising XML files and XML file containers forming a hierarchy; wherein at least one XML file

container contains a plurality of XML files, each of which contains a plurality of XML elements”.

However, Sedlar discloses “an XML data repository comprising XML files and XML file containers forming a hierarchy; wherein at least one XML file container contains a plurality of XML files, each of which contains a plurality of XML elements” (hierarchical system with index entries for files in a file system, column 5, lines 20-27; note that a directory can be considered a file container).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga and Sedlar because using the steps of “an XML data repository comprising XML files and XML file containers forming a hierarchy; wherein at least one XML file container contains a plurality of XML files, each of which contains a plurality of XML elements” would have given those skilled in the art the tools to improve the invention by providing a way to label information from diverse data sources. This gives the user the advantage of being able to search content across a multitude of domains in a single search.

Neither Abounaga nor Sedlar explicitly indicate “and compute a computational cost associated with each of two or more methods of accessing said one or more XML resources from the XML database repository, based on said statistics” or “wherein XML files of said nodes are XML resources, and wherein computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said

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request, an index in which said XML resources are indexed to said database repository”.

However, Diao discloses “and compute a computational cost associated with each of two or more methods of accessing said one or more XML resources from the XML database repository, based on said statistics” (section 6.4.1, second paragraph) or “wherein XML files of said nodes are XML resources, and wherein computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository” (section 5.3, last three paragraphs; section 6.2.2, second to last paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Aboulnaga, Sedlar and Diao because using the steps of “and compute a computational cost associated with each of two or more methods of accessing said one or more XML resources from the XML database repository, based on said statistics” or “wherein XML files of said nodes are XML resources, and wherein computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository” would have given those skilled in the art the tools

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to improve the invention by providing fast, one-the-fly matching of XML-encoded data to large numbers of query specifications. This gives the user the advantage of more responsive search systems.

As per claim 59, Abounaga teaches

A method comprising the computer-implemented steps of: (see abstract)
gathering statistics by a database server about XML files and XML file containers; (section 1, fifth paragraph)

receiving a request to the database server for access to one or more XML resources; (section 1, fifth paragraph)

computing a selectivity value, based at least in part on the statistics, for a predicate included in the request; (section 1, fifth paragraph)

wherein the method is performed by one or more computing devices. (section 1, second paragraph)

Abounaga does not explicitly indicate “wherein the XML files and XML file containers are hierarchically stored in a database repository that is managed by the database server”.

However, Sedlar discloses “wherein the XML files and XML file containers are hierarchically stored in a database repository that is managed by the database server” (hierarchical system with index entries for files in a file system, column 5, lines 20-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga and Sedlar because using the steps of

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“wherein each node in said hierarchy is either an XML file or an XML file container; wherein at least one node in the hierarchy is an XML file container that contains a plurality of XML files, each of which contains a plurality of XML elements” would have given those skilled in the art the tools to improve the invention by providing a way to label information from diverse data sources. This gives the user the advantage of being able to search content across a multitude of domains in a single search.

Neither Abounaga nor Sedlar explicitly indicate “through a view”, “and determining a query plan based, at least in part, on the selectivity value” and “wherein the method further comprises computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository”.

However, Diao discloses “through a view” (section 7, second paragraph) and “and determining a query plan based, at least in part, on the selectivity value” (section 8, second paragraph), “wherein the method further comprises computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository” (section 6.4.1, fourth paragraph; section 4.4, second paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Abounaga, Sedlar and Diao because using the steps of “through a view”, “and determining a query plan based, at least in part, on the selectivity value” and “wherein the method further comprises computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in

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which said XML resources are indexed to said database repository” would have given those skilled in the art the tools to improve the invention by providing fast, one-the-fly matching of XML-encoded data to large numbers of query specifications. This gives the user the advantage of more responsive search systems.

As per claim 61,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 59 and is similarly rejected.

Response to Arguments

6. Applicant argues that the cited references do not teach various limitations related to the computation cost of traversing XML resources or accessing through a view for XML resources, however Applicant's arguments with respect to claims 9-10, 30-31, 42, 46, 58-59 and 61 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jay A Morrison/
Examiner, Art Unit 2168

Jay Morrison
TC2100